

REMARKS

Claims 1, 14 and 26 are amended. Claims 4, 5, 12, 13, 17-19, 21, 25, and 34-36 are withdrawn. Claims 37-48 have been cancelled. Claims 1-36 are pending in the present application.

Claims 1, 14 and 26 are amended to simplify the claim language without adding new matter or narrowing the claims.

Claims 1 and 10 stand rejected under 35 U.S.C. §102(e) as being unpatentable over U.S. Publication No. 2004/0227061 ("Clevenger"). Applicant respectfully traverses this rejection.

Claim 1 recites an image sensor comprising, *inter alia*, "a plurality of trenches, each trench being provided along a perimeter of a respective pixel cell, . . . each trench extending to a surface of the base layer, each trench having sidewalls, and being at least partially filled with a material that inhibits electrons from passing through said trench." Clevenger does not disclose all the limitations of claim 1. Clevenger discloses that "an etch is performed to etch the silicon 100B so as to form the trenches 116A, 116." Para. [0049]. Clevenger further discloses that the "trenches 116A and 116B are formed and define the pixel islands 80 that include the buried n+ cube 106" and that the "depth of the trenches 116A, 116B is preferably equivalent to that of the buried n+ region 106." *Id.* However, Clevenger does not disclose "a plurality of trenches, . . . each trench extending to a surface of the base layer," as recited in claim 1. As disclosed in Figures 8-12 of Clevenger, neither the n+ region (106), nor the trenches (116A, 116B) extend to a surface of the base layer (100A).

Since Clevenger does not disclose each and every element of claim 1, claim 1 and claim 10 depending therefrom are patentable over the reference. Accordingly,

Applicant respectfully requests that the 35 U.S.C. § 102(e) rejection of claims 1 and 10 be withdrawn.

Claims 8 and 9 stand rejected under 35 U.S.C §103(a) as being unpatentable over Clevenger in view of U.S. Publication No. 2003/0089929 ("Rhodes"). Applicant respectfully traverses this rejection.

As provided by 35 U.S.C. § 103(c), Rhodes does not preclude patentability under 35 U.S.C. § 103(a). At the outset, the present application and Rhodes were, at the time the present invention was made, subject to an obligation of assignment to the same entity: Micron Technology, Inc. The assignment for the present application was recorded in the PTO on February 20, 2004, on Reel 015010, Frame 0557. Rhodes is a continuation of U.S. Patent No. 6,500,692, which is a divisional of U.S. Patent No. 6,232,626 ("the '626 patent"), which was subject to an obligation of assignment to Micron Technology, Inc. at the time the present invention was made, and lists a different inventor than the present application. Rhodes is currently subject to the '626 patent's obligation of assignment to Micron Technology, Inc., and was also subject to the '626 patent's obligation of assignment to Micron Technology, Inc. at the time the present invention was made. The assignment for the '626 patent was recorded in the United States Patent and Trademark Office (the "USPTO") on February 1, 1999, on Reel 009747, Frame 0955.

Furthermore, Rhodes has a filing date of November 5, 2002, which is prior to the filing date of the present application. Thus, the subject matter of the Rhodes reference qualifies as prior art only under 35 U.S.C. §102(e). Therefore, 35 U.S.C. § 103(c) applies and Applicants respectfully request the withdrawal of the 35 U.S.C. § 103(a) rejection of claims 8 and 9.

Claims 2, 3, 6, 7, 14-20, 22-24 and 26-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Clevenger in view of Rhodes and further in view of Japanese Publication No. 63009968 ("Yoshinori"). Applicant respectfully traverses this rejection.

As discussed above, the Rhodes reference qualifies as prior art only under 35 U.S.C. §102(e). Therefore, 35 U.S.C. § 103(c) applies and Rhodes cannot be combined with other references in a 35 U.S.C. § 103(a) rejection.

Clevenger and Yoshinori, combined, do not teach or suggest all the limitations of claims 2, 3, 6, 7, 14-20, 22-24 and 26-34 . Claims 2, 3, 6 and 7 depend from claim 1. Claims 15-20 and 22-24 depend from claim 14. Claims 27-34 depend from claim 26. As discussed above, Clevenger does not teach or suggest "a plurality of trenches, . . . *each trench extending to a surface of the base layer,*" as recited in claim 1. Likewise, Clevenger does not teach or suggest "a trench formed in a substrate . . . , wherein said trench extends to a surface of a base layer below said substrate," as recited in claims 14 and 26. Yoshinori is entirely silent on this feature and therefore does not supplement the inadequacy of Clevenger in this respect.

Since the references do not teach or suggest all the limitations of independent claims 1, 14 and 26, claims 1, 14 and 26 and claims 2, 3, 6, 7, 14-20, 22-24 and 26-34 depending therefrom are patentable over the reference. Accordingly, Applicants respectfully request the withdrawal of the 35 U.S.C. § 103(a) rejection of claims 2, 3, 6, 7, 14-20, 22-24 and 26-34.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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